Catch and Release

For use with: Arizona Wildlife Views Television Show, 07-08 Season, Episode 1

Human-Environment Interactions; Populations **Time Frame:** 1-2 hours **Grade:** 4-8

Overview:
This video focuses on an important component of wildlife management: re-establishing populations. Two of the segments deal with the tools and techniques that biologists use to capture large mammals from one part of the state and release them to another part in order to supplement a declining population. The other segment showcases the remarkable reintroduction success of the California condors. Students will have the opportunity to compare and analyze the techniques used in all three cases.

Essential Questions
- How do biologists manage wildlife populations?

Objectives
- Explain when hunting is and is not an appropriate population management tool.
- Compare the techniques and tools for three reintroduction strategies using a Venn Diagram.

Arizona Department of Education Standards
Science

4th grade	5th grade	6th grade	7th grade	8th grade
S3-C1-PO1	S3-C1-PO3	S2-C1-PO4	S2-C1-PO4	S3-C2-PO2
S4-C3-PO4	S3-C2-PO2	S3-C2-PO2	S3-C1-PO1	
		S3-C2-PO4	S3-C2-PO2	

Materials and Resources
- Copy of Arizona Wildlife Views episode

Teacher Preparation
- Acquire a copy of the television show. You can check local listings to determine when it will air and record it directly. You may also check the Department's web site to see if a copy can be downloaded or ordered.
- Write the vocabulary words and questions on the board.

Background Information:
This is not a lesson plan in the traditional sense. It does not provide step-by-step directions for completing an activity. Instead, it provides information to help you use an episode of the *Arizona Wildlife Views* television program in your classroom. It contains four suggested activities along with extensions and modifications. The first activity focuses on vocabulary. We have provided and defined some of the words used in the video. You are encouraged to use any appropriate strategies to introduce these to your students. Then, there is a series of comprehension questions that students can answer while watching the video. Answers (directly from the video) are provided in italics. Next, the critical thinking questions build on the major concepts introduced in the video. Students need to put a little bit more thought into these questions. Some reasonable answers are provided in italics. However, teachers should be cautious and realize that students may provide additional answers that can be supported with evidence. Finally, there is an in-depth activity. This activity allows students to evaluate and synthesize one or

more of the concepts from the video, perhaps applying it to a new context or utilizing additional skills.

This episode originally aired on PBS (KAET Channel 8) in Phoenix on January 20, 2008. It may also be shown on regional PBS stations or other channels. For additional viewing information or download options, please visit **http://www.azgfd.gov/focuswild**.

Additional information about the animals featured in this episode can be found at:

- ✓ Kofa National Wildlife Refuge Bighorns: http://www.azgfd.gov/w_c/bhsheep/index.shtml
- ✓ California Condors: http://www.azgfd.gov/w_c/california_condor.shtml
- ✓ Desert Bighorn Sheep: http://www.azgfd.gov/h_f/game_bighorn.shtml
- ✓ Pronghorn: http://www.azgfd.gov/h_f/game_antelope.shtml

Relevant Vocabulary:

- o Brisket – lower chest of an animal
- o Domestic – animals tamed and raised by humans; not wild
- o Roost – a place where birds sleep
- o Scavengers – animals that feed on dead organisms
- o Self-sustaining – population able to survive without help
- o Social Species – animals that live together in a community
- o Telemetry – using radio transmitters and receivers to track animals
- o Transplant – to move animals from one location to another

Comprehension Questions:

1. Why are the pronghorn being captured? *Answer: To move some animals, which have been successful in one area, to another part of their historic range.*
2. What types of procedures do the scientists do to ensure the safety of the pronghorn during capture and transport? *Answer: Extensive training of staff and volunteers, anti-anxiety drugs, antibacterial drugs, addition of fluids full of vitamins and minerals, ultrasounds, surgery and wound treatment.*
3. What are the predators of condors? *Answer: Coyotes, golden eagles.*
4. How do condors get lead poisoning? In what ways is the Arizona Game and Fish Department dealing with this problem? *Answer: Eating carcasses that contain lead bullets. The department is encouraging hunters in the area to use non-lead bullets.*
5. Why is a helicopter used to release bighorn sheep? *Answer: Allows the bighorn to be released in more remote locations without them being injured in a rough and bumpy truck ride through rugged terrain.*
6. Why are domestic sheep and goats a threat to bighorn? *Answer: They may carry diseases to which bighorn sheep have little or no resistance.*
7. What is the purpose of the numbered ear or wing tags? *Answer: To identify the individual animals from a distance.*

Critical Thinking Questions:

1. Why are scientists discouraging interactions between condors and humans? *Answer: It is important for condors, and all animals, to maintain their fear of humans. If not, then they can risk becoming domesticated and lose some of their natural survival instincts. As a result, they become reliant on humans for food and other necessities to survive.*
2. What is the difference between regulated and unregulated hunting? Which is more beneficial to wildlife? *Answer: Regulated hunting means that laws are in place to control the number of animals that can be taken. These laws may include requirements for hunters to be licensed and specific times of year for hunts. They also put in place penalties for individuals who do not follow the laws. In contrast, unregulated hunting is carried out with no oversight. Unregulated hunting is responsible for a number of animals becoming endangered or extinct.*

Regulated hunting, however, has never resulted in an animal going extinct.

In-Depth Activity: Comparing and Contrasting
This video focuses on the work of the Arizona Game and Fish Department and others to release three different species of animals back into the wild. Try to determine how the strategies and procedures used in all three instances are similar and different.

As you watch be sure to take notes. Pay careful attention to the habitats of the animals as well as the tools and techniques used by the scientists to capture and release the animals. When the video is completed, create a Venn Diagram comparing the three animal releases.

Pay particular attention to the differences between the three techniques. Why are there differences in the first place? Are there techniques used in one situation that would not work in others? Can the scientists from one situation learn from those in another? What ideas can you offer to improve any of the releases?

Differentiated Instruction:

Extensions:

- **Geography:** The pronghorn were captured just outside Prescott and released near Meteor Crater. You are the scientist responsible for transporting the animals. Using a map, plan the shortest route from Prescott to Meteor Crater.
- **Geography:** The condors are released near the Vermillion Cliffs in northern Arizona. Locate these on a map. Recently, tourists have started seeing condors at the south rim of the Grand Canyon. Calculate the distance and direction that the condors need to fly in order to get there.
- **Language Arts:** Pretend you are one of the pronghorn, condors, or bighorn sheep from the video. You are in your pen about to be released back into the wild. Write a story describing your experience.

Modifications:

- Create a student handout with the vocabulary words and questions already provided.
- Provide students with the definitions and have them match them to the appropriate vocabulary words.
- Provide fill-in-the-blank responses for the Comprehension Questions, allowing students to listen for appropriate words to complete the sentences.

Reflection:

Use the space below to reflect on the success of the lesson. What worked? What didn't? These notes can be used to help the next time you teach the lesson. In addition, the Department would appreciate any feedback. Please visit **http://www.azgfd.gov/focuswild** and submit a lesson evaluation.